UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

November 8, 2007

Chris Gamache
Project Manager, ADEQ
1110 East Washington Street
Phoenix, AZ 85007

Re: M52, Second Five Year Review Addendum Report – 20th Street Groundwater Treatment Facility, OU2

Dear Mr. Gamache:

Please find attached the Five Year Review Addendum Report for the 20th Street Groundwater Treatment Facility, OU2. This document serves to remind ADEQ of the requirement to assess the status of the thirteen follow-up actions and recommendations listed in the 2006 Second Five Year Review for OU2.

If you have any questions concerning this report, please contact me at (415) 972-3199.

Sincerely,

Leah Butler
Superfund Remedial Project Manager
Private Sites Section (SFD-8-2)

cc: Nicole Coronado, ADEQ
Robert Peeples, ADEQ
David Haag, ADEQ

Attachment

Second Five Year Review Addendum Report
20th Street Groundwater Treatment Facility
52nd Street Superfund Site, Operable Unit 2 Area
Phoenix, Arizona

I. Summary

A second Five-Year Review for the Motorola 52nd Street Superfund Site, Operable Unit (OU) 2, located in Phoenix, Arizona, was completed in September 2007. OU2 is part of the Motorola 52nd Street Superfund Site that consists of three operable units: OU1, OU2, and OU3. The OU2 treatment system is located on the northwest corner of the intersection of 20th Street and Washington Street. U.S. Environmental Protection Agency (EPA) is the lead agency for OU2; however, Arizona Department of Environmental Quality (ADEQ) conducted the OU2 Five-Year Review on behalf of EPA.

The 2006 Five-Year Review identified several issues regarding the existing OU2 system capture analyses. A protectiveness determination of the OU2 interim remedy could not be made at the time of the review due to the zone of capture issues. On September 25, 2006, EPA concurred with the ADEQ's deferral of the protectiveness determination for the Motorola 52nd Street Superfund Site. EPA and ADEQ developed a list of follow-up actions and recommendations which are needed to determine the protectiveness of the OU2 Interim Remedy.

This document serves to remind ADEQ of the requirement to assess status of the thirteen recommendations listed in the 2006 Five Year Review. This information is crucial in order to have enough information to evaluate the effectiveness and the protectiveness of the OU2 system in the next Five Year Review. EPA will continue to defer the protectiveness determination until the next Five Year Review which is due on September 25, 2011. At that time, ADEQ should have enough information to reanalyze the OU2 protectiveness statement. In the meantime, EPA is required to evaluate the progress made since the 2006 Five-Year Review in this Five-Year Review Addendum Report.

II. Purpose

The purpose of this Five-Year Review Addendum is to provide an update on the thirteen follow-up actions and recommendations ADEQ and EPA agreed to complete in order to address the outstanding issues in the OU2 Second Five-Year Review.

III. Summary of 2006 Five-Year Review

The second Five-Year Review for the Motorola 52nd Street Superfund site, OU2, located in Phoenix, Arizona was conducted by LFR Inc. (LFR) on behalf of ADEQ. The review period was from September 30, 2001 through July 2006.

EPA and ADEQ were required to conduct the Second Five-Year Review pursuant to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) §121 and the National Contingency Plan (NCP). Together, these regulations require that the remedial

actions resulting in any hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure be reviewed every five years to assure protection of human health and the environment. Since hazardous substances, pollutants, or contaminants are left on site above levels that allow for unlimited use and unrestricted exposure, this review is required for the OU2 site. The purpose of the Five-Year Review is to determine whether OU2 continues to meet remedial objectives and is protective of human health and the environment.

The five-year review consisted of the following activities: (1) review of relevant documents; (2) interviews with appropriate operations staff, state and federal agencies, local government officials, and concerned community members; and (3) a site inspection.

The assessment identified several issues in the review of the existing OU2 system capture analyses. These problems include non-conservative interpretation of groundwater data, failure to use all available data, and failing to effectively evaluate the results of specific analyses in conjunction with the conceptual site model. Several data gaps were identified that need to be filled in order to fully evaluate the OU2 capture effectiveness. A review of applicable or relevant and appropriate requirements (ARARs) determined that there are no newly promulgated standards that affect OU2; however, new ARARs and To Be Considereds (TBCs) are likely to be determined for the final remedy.

A protectiveness determination of the OU2 interim remedy was not made due to the zone of capture issues identified in the review. EPA and ADEQ developed a list of follow-up actions and recommendations which are needed to determine the protectiveness of the OU2 Interim Remedy. The actions require the efforts of the Companies and agency oversight to be completed. An iterative approach with effective communication among the stakeholders throughout the recommended actions is needed to address these issues quickly and effectively.

IV. Issues that Required Deferral

Issue #	Issue Type	Issues	Protectiveness Affected?	
			Current	Future
1		Little to no groundwater elevation and quality data are available in any of the subunits along the north side of the OU2 plume. As a result, the impact of the OU2 treatment system can not be adequately evaluated in that area. Additional monitoring wells are needed along the north side of the OU2 plume in each of the subunits to evaluate the OU2 capture effectiveness.	Yes	Unknown
2		Groundwater elevation and quality data are lacking in all three subunits along the south side of the OU2 plume. As a result, the impact of the OU2 treatment system is difficult to assess in this area. Additional monitoring wells are needed along the south side of the OU2 plume in each of the subunits to evaluate the OU2 capture effectiveness.	Yes	Unknown

3	**Groundwater Capture Issues**	Additional groundwater elevation and quality data are needed downgradient of the OU2 treatment system to evaluate capture in the D subunit. Additional monitoring wells are needed in the D subunit downgradient of the OU2 treatment system to evaluate capture in subunit D.	Yes	Unknown
4		Although capture appeared more effective in 2005, it appears to be related to a northwest rotation of groundwater gradients due to recharge from the Salt River flow event. However, based on a conservative interpretation of the data, using converging lines of evidence, it appears the TCZ along the south side of the plume is not fully captured.	Yes	Unknown
5	**Groundwater Future Issues**	EW-S groundwater extraction rates have declined. The well was designed to operate at 1,700 gpm. The initial extraction rate for the well was approximately 800 gpm and has declined to the current extraction rate of approximately 200 gpm. If the rate declines further in the future, capture to the south may also be reduced.	Unknown	Unknown
6		Future containment of the D subunit is problematic because: the D subunit is primarily contaminated in the south portion of OU2, EW-S does not penetrate the D subunit and therefore does not directly extract from the D subunit, and capture is currently questionable and may decrease if EW-S extraction rates continue to decline.	Unknown	Unknown
7		The Agencies are concerned that the stagnation zone on the upgradient and downgradient side of the Honeywell bedrock ridge is not being addressed by the OU2 system.	Unknown	Unknown
8		Long-term multi-well aquifer tests in subunits B and D are needed to gain a better understanding of the OU2 conceptual site model and to facilitate future OU2 analyses.	Unknown	Unknown
9		The OU2 system is an interim remedy and therefore a final remedy for OU2 must be developed. The final remedy will necessarily address the issues identified in this five-year review and must consider and integrate the Honeywell light nonaqueous phase liquid (LNAPL) remedy.	Unknown	Unknown
10	**Health Assessment Issues**	Changes to the toxicity levels for certain contaminants have occurred since the last five-year review. Once the TCE and PCE toxicity level has been finalized the health assessment should be updated.	Unknown	Unknown
11		New methodology is being developed for indoor air risk evaluation. Once the methodology is finalized, an indoor air risk evaluation should be performed for the OU2 area.	Unknown	Unknown
12		Boron has been detected in influent and effluent samples from the treatment plant.	Unknown	Unknown
13	**General Issues**	The 2005 Effectiveness Report is not consistent with respect to the lithologic and hydrogeologic representation and interpretation of the D subunit. Cross section Figure 2.6 does not include the interpretation of bedrock or the D subunit on the east portion of the cross-section. Figure 3.9 does not depict the area where the D subunit is pinched-out by the OU2 bedrock ridge. Consistent interpretation of the hydrostratigraphic subunits and available data is needed for OU2 analyses (e.g. interpretation of subunit D as both unconfined and semi-confined). Additionally, consistent use of available data is needed for OU2 analyses (e.g. D subunit groundwater elevations along the north side of OU2).	Unknown	Unknown

V. Status of Follow-up Actions and Recommendations

Issue #	Issue Type	Follow-up Actions and Recommendations	Responsible Party	Oversight Agency	Completion Date	STATUS
1	**Groundwater Capture Issues**	A work plan should be prepared and submitted to ADEQ to address the data gaps along the north side of the OU2 plume. The work plan should include the installation of monitor wells in each of the three alluvial subunits.	The Companies	EPA, ADEQ	3/30/2007	EPA, ADEQ, and the Companies agreed to address this issue as part of the Final Remedy for OU2.
2		A work plan should be prepared and submitted to ADEQ to address the data gaps along the south side of the OU2 plume. The work plan should include the installation of monitor wells in each of the three alluvial subunits.	The Companies	EPA, ADEQ	3/30/2007	CRA installed monitoring wells NW-16-M/D and NW 19-M/D to clarify hydraulic flow lines south of the GES and to provide supplemental information for the south side of the plume.
3		A work plan should be prepared and submitted to ADEQ to address the data gaps downgradient of the OU2 treatment system. The work plan should include the installation of monitor wells in the D subunit.	The Companies	EPA, ADEQ	3/30/2007	CRA installed monitoring wells NW17-S and NW18-S/M to provide supplemental hydraulic and water quality information down-gradient of the GES.
4		Future capture evaluations shall include a conservative interpretation of groundwater elevation data, an analysis of water level pairs for appropriately configured monitor wells, capture zone calculations that are conceptually consistent with site data and interpretation, and concentration trend analysis that includes historic data.	The Companies	EPA, ADEQ	3/30/2007	Ongoing
5		The Companies should continue to monitor the extraction rates for EW-S.	The Companies	EPA, ADEQ	3/30/2007	The extraction rates for EW-S are monitored regularly.

6		The Companies should develop a plan to monitor groundwater capture along the southern boundary, particularly in subunit D.	The Companies	EPA, ADEQ	3/30/2007	CRA installed monitoring wells NW16-M/D and NW19-M/D to provide supplemental information for the south side of the plume in subunit D.
7	**Groundwater Future Issues**	The Companies should prepare a plan to evaluate the effectiveness of the OU2 treatment system on the stagnation zones upgradient and downgradient of the Honeywell bedrock ridge.	The Companies	EPA, ADEQ	3/30/2007	EPA, ADEQ, and the Companies agreed to address this issue as part of the Final Remedy for OU2.
8		The Companies should develop a plan to conduct long-term multi-well aquifer tests in subunits B and D. The data obtained from these tests will be useful for designing a final remedy for OU2.	The Companies	EPA, ADEQ	3/30/2007	A plan for the aquifer test has not been developed.
9		The final OU2 remedy will need to incorporate the Honeywell LNAPL remedy.	The Companies	EPA, ADEQ	Ongoing	Ongoing
10		A review of the toxicity values for COCs at the Site should be conducted before the final remedy is selected.	ADHS	EPA, ADEQ	Ongoing	Ongoing
11	**Health Assessment Issues**	An indoor air risk evaluation should be conducted at the Site. Once the guidance for evaluating the vapor intrusion to indoor air pathway is finalized or EPA and ADEQ can agree to the process for evaluating the pathway, an indoor air risk evaluation should be performed for the OU2 area.	The Companies	EPA, ADEQ	Ongoing	ADEQ and EPA have not agreed on a process for evaluating the indoor air pathway.
12		Effluent samples should be collected and analyzed for boron. If the results are above the surface water limit for agricultural irrigation, SRP should be notified.	The Companies	EPA, ADEQ	3/30/2007	EPA has requested that boron samples be taken during the next sampling round in September 2007.

13	**General Issues**	The Agencies recommend a technical work group meeting to discuss and address groundwater elevation and quality data, capture issues, and hydrostratigraphic issues.	The Companies, ADEQ	EPA, ADEQ	12/1/2006	Technical Working Group (TWG) meeting was held on November 15, 2006.

Notes
ADEQ - Arizona Department of Environmental Quality
COC - Contaminant of Concern
COP - City of Phoenix
EPA - Environmental Protection Agency
MCL - Maximum Contaminant Level
O&M - Operation and Maintenance
OU2 - Operable Unit 2
The Companies - Refers to Freescale and Honeywell
TCE - Trichloroethene
VOC - Volatile Organic Compounds

VI. New Protectiveness Statement

A protectiveness determination of the OU2 interim remedy cannot be made at this time until further information is obtained. The necessary follow-up actions and recommendations identified in this Report are needed to evaluate protectiveness. The actions will require the efforts of the Companies and the Agencies to be completed.